

REMARKS

This Amendment and Response to Non-Final Office Action is being submitted in response to the non-final Office Action mailed February 16, 2005. Claims 1-22 are pending in the Application. Claims 1, 4, 5, 7-19, 21, and 22 stand rejected under 35 U.S.C. 102(b) as being anticipated by Homme et al. (U.S. Patent No. 6,262,422). Claims 2, 3, 6, and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Homme et al. as applied to Claims 1, 13, and 19.

In response to these rejections, Claims 1, 13, 18, and 19 have been amended to further clarify the subject matter which Applicant regards as the invention. These amendments are fully supported in the Specification, Drawings, and Claims of the Application and no new matter has been added. Based upon the amendments, reconsideration of the Application is respectfully requested in view of the following remarks.

Rejection of Claims 1, 4, 5, 7-19, 21, and 22 Under 35 U.S.C. 102(b) – Homme et al.:

Claims 1, 4, 5, 7-19, 21, and 22 stand rejected under 35 U.S.C. 102(b) as being anticipated by Homme et al.

The Application indicates that a single-layer transmissive and reflective barrier coating is disposed on the surface of the scintillator material of an x-ray detector. This scintillator material comprises a plurality of cesium iodide needles, for example. The Application also indicates that this single-layer transmissive and reflective barrier coating is “substantially conformal” and is disposed on the surface of the scintillator material “both on top of the needles and around the sides or edges of the needles.”

Typically, multiple-layer transmissive, reflective, and barrier coatings are disposed adjacent to the tops of the needles only, especially the reflective coating. For

example, Homme et al. disclose that the inorganic reflective/transmissive film (10) is disposed adjacent to the tops of the needles only, with the first organic barrier film (9) disposed therebetween. See Figs. 2, 7-11, and 13.

Advantageously, utilizing a single-layer transmissive and reflective barrier coating that is “substantially conformal” and that is disposed on the surface of the scintillator material “both on top of the needles and around the sides or edges of the needles” maximizes the reflection of light and improves overall imaging performance, resulting in sharper images.

This point of novelty is made explicit in amended Claims 1, 13, 18, and 19, which recite:

1. A scintillator comprising:

a scintillator material comprising a single-layer barrier coating disposed thereon, wherein the barrier coating: (1) provides barrier protection to the scintillator material, (2) is capable of transmitting light therethrough, and (3) is capable of reflecting light back into the scintillator material, ***and wherein the barrier coating is disposed on top portions and interstitially on side portions of the scintillator material.***

13. A scintillator comprising a single-layer coating thereon that protects the scintillator from ambient conditions, transmits light therethrough, and reflects light back into the scintillator, ***wherein the coating is disposed on top portions and interstitially on side portions of the scintillator.***

18. A radiation imaging system comprising:

an x-ray source;

an x-ray detector comprising:

a scintillator comprising:

a scintillator material comprising a single-layer barrier coating disposed thereon, wherein the barrier coating: (1) provides barrier protection to the scintillator material, (2) is capable of transmitting light therethrough, and (3) is capable of reflecting light back into the scintillator material, ***and wherein the barrier coating is disposed on top portions and interstitially on side portions of the scintillator material;***
and

an amorphous silicon array optically coupled to the scintillator;

wherein the x-ray source is capable of projecting a beam of x-rays towards the x-ray detector, the x-ray detector is capable of detecting the x-rays, and an image can be created therefrom.

19. A method for making a scintillator having a single-layer barrier coating thereon that has both protective properties and light reflective and light transmissive properties, the method comprising:

disposing an amorphous silicon array on a detector substrate;

disposing a scintillator material on the amorphous silicon array;

forming a single-layer barrier coating on the scintillator material;

wherein the barrier coating: (1) provides barrier protection to the scintillator material, (2) is capable of transmitting light therethrough, and (3) is capable of reflecting light back into the scintillator material, ***and wherein the barrier coating is disposed on top portions and interstitially on side portions of the scintillator material.***

Therefore, Applicant submits that the rejection of Claims 1, 13, 18, and 19 under 35 U.S.C. 102(b) as being anticipated by Homme et al. has now been traversed and respectfully requests that this rejection be withdrawn. Because Claims 4, 5, 7-12, 14-17, 21, and 22 are dependent from Claims 1, 13, 18, and 19, Applicant respectfully requests that the rejection of these claims under 35 U.S.C. 102(b) also be withdrawn.

Rejection of Claims 2, 3, 6, and 20 Under 35 U.S.C. 103(a) – Homme et al.:

Claims 2, 3, 6, and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Homme et al. as applied to Claims 1, 13, and 19.

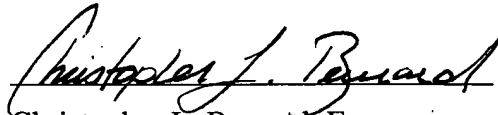
Because Claims 2, 3, 6, and 20 are dependent from Claims 1, 13, 18, and 19, and in light of the above, Applicant respectfully requests that the rejection of these claims under 35 U.S.C. 103(a) also be withdrawn.

CONCLUSION

Applicant would like to thank Examiner for the attention and consideration accorded the Application. Should Examiner determine that any further action is necessary to place the Application in condition for allowance, Examiner is encouraged to contact undersigned Counsel at the telephone number, facsimile number, address, or email address provided below. It is not believed that any fees for additional claims, extensions of time, or the like are required beyond those that may otherwise be indicated in the documents accompanying this paper. However, if such additional fees are required, Examiner is encouraged to notify undersigned Counsel at Examiner's earliest convenience.

Respectfully submitted,

Date: April 12, 2005



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